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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,609	09/26/2003	Patrick T. Bohan	TI-35906	3216

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EXAMINER	
COSIMANO, EDWARD R	
ART UNIT	PAPER NUMBER
2863	

NOTIFICATION DATE	DELIVERY MODE
05/23/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/672,609	BOHAN, PATRICK T.	
	Examiner	Art Unit	
	Edward R. Cosimano	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 March 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) *none* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. The Oath/Declaration and Abstract as originally filed are acceptable to the examiner.

2. The set of drawings containing 8 sheets of 8 figures numbered as figures 1, 2, 3, 4A, 4B, 4C, 4D, 5 as presented in the set of drawings filed on 26 September 2003 are acceptable to the examiner.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3.1 Claims 1-21 are rejected under 35 U.S.C. 102(a) as being anticipated by Cherubal et al (6,476,741).

3.2 Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Cherubal et al (2002/0030615).

3.3 In regard to claims 1-21, either Cherubal et al ('615 or '741) disclose a machine/process that provides the useful and beneficial function of compensating for the non-linear operation of an analog to digital converter (ADC). To this end as taught by either Cherubal et al ('615 or '741) at each transition between output codes of the ADC there are both "integral non-linearity" (INL) errors and "differential non-linearity" (DNL) errors between the actual value of the analog signal being converted and the corresponding digital code produced by the ADC. Further the INL error values and DNL error values are determined and used when generating a mathematical model of the operation of the ADC that is used to provide the compensation/calibration characteristics for the ADC that may be used to train and test ADCs.

3.3.1 In regard to the type of modeling used in the machine/process of either Cherubal et al ('615 or '741) as would be recognized and understood by one of ordinary skill at the time the invention was made:

A) because each bit of the ADC has two states, that is either "on" or "off", the model that is used in the machine/process of either Cherubal et al ('615 or '741) inherently must consider "bi-state functionality; and

B) any model that did not describe the operation of the ADC being tested would not produce meaningful results, then the machine/process of either Cherubal et al ('615 or '741) must accurately model the type of A to D being considered.

3.3.2 In regard to the errors that occur in the machine/process of either Cherubal et al ('615 or '741) as would be well understood and recognized by one of ordinary skill at the time the invention was made these error are cause by a combination of both (A) the characteristics of the components used to construct the ADC, and (B) the difference between any two quantization levels for the ADC.

4. Response to applicant's arguments.

4.1 The objections and rejection that have not been repeated here in have been over come by applicant's last response.

4.2 . In regard to the rejection of claims 1-21 under 35 U.S.C. 102, applicant's arguments are deem non persuasive and this rejection has been maintained in view of the respective modified rejection as set forth above and the following considerations.

4.2.1 In regard to applicant's arguments regarding the nature of the subject matter recited as the invention and the functions/acts that as recited in the claims are performed by the instant invention. It would appear that applicant has not considered what the knowledge of one of ordinary skill would be regarding the claimed invention, how one of ordinary skill would interpret the limitations of the claimed invention, and has read constraining limitation from the disclosure into the claims, which is a practice that the Court has instructed the Patent Office not to do, see In re PRATER AND WEI, 162 USPQ 541 at 551 (CCPA 1969).

4.2.2 In regard to distinguishing the invention recited in process claims 8-14, machine claims 1-7 & 15-21 from the teachings/suggestions of the applied prior art. It is noted that claims 1-7 & 15-21 recite a machine as the claimed invention and therefore must be distinguished over the prior art by the structure recited as the claimed invention and not the functions/acts performed by the claimed invention, whereas claims 8-14 recite a process as the claimed invention and

therefore must be distinguished over the prior art by the acts performed by the claimed invention and not the structure that performs the acts, see MPEP sections 2111, 2112 & 2114.

4.2.3 With the above in mind, because one of ordinary skill at the time the invention was made would reasonably interpret the language used in the limitations of the pending claims, as provided by the non-limiting guidance of applicant's disclosure, to include any and all structures/acts that could perform the acts/functions that are recited as the invention. Therefore, the process of claims 8-14 or the machine of claims 1-7 & 15-21, as recited in the pending claims would merely convey to one of ordinary skill at the time the invention was made that applicant has merely recited:

A) a preamble that recites a non-limiting intended field of use for the process/structure of claims 1-21, since what is recited as the preamble would not be recognized as imparting any limiting act/structure to what is described in the body of the claim and hence does not go beyond a statement of the intended field of use of the claimed invention, see MPEP sections 2111, 2112 & 2114.

B) a series of acts/structures in claims 1-21 that are set forth by merely reciting a name and one or more associated acts/functions with out reciting the specific details of the acts/functions to be performed by the recited structure and hence, the claims fail to positively recited a limitation that would restrict what one of ordinary skill at the time the invention was made would recognize as the structure to perform the recited acts/functions beyond any structure that would perform the recited acts/functions. Therefore, one of ordinary skill at the time the invention was made would recognize that these limitations would be interpreted as merely conveying/imparting that an unspecified someone or something is to perform one or more acts/functions in an unspecified manner, see MPEP sections 2111, 2112 & 2114.

4.2.4 In view of the above and as set forth above in the rejection the examiner's use of the applied prior art would be clearly recognized by one of ordinary skill in the art at the time the invention was made as:

A) providing a teaching or suggestion of every act/function of the acts/structure recited as the invention in a manner that is consistent with how one of ordinary skill at the time the invention was made would have interpreted both: (1) the instant claims and

disclosure, and (2) the teachings of the prior art with the aid of any guidance provided by the instant disclosure.

Where contrary to applicant's arguments, the applied prior art would teach or suggest what would be clearly recognized by one of ordinary skill in the art at the time the invention as being what is recited as the claimed invention regardless of whether or not:

A) that the purpose of the prior art is different than what is disclosed/claimed; or

B) the manner in which data/information that is processed/displayed in the prior art different than what is disclosed.

It noted that as set forth in MPEP 2123(II) the mere fact that an invention that contains of the recited structures or process acts, see above, but is for a different purpose does not render the claimed invention as either not "anticipated" or "unobvious" in view of the applied prior art. Further, it is noted that the data/information that is processed/displayed as recited in machine claims 1-7 & 15-21 or process claims 8-14 does not affect the operation of either: (1) the structures that are recited as the invention in machine claims 1-7 & 15-21; or (2) the functions/act that are recited as the invention in process claims 8-14. Hence the data/information that is process and displayed is "non-functional descriptive material" that may not be used to render a claimed invention that otherwise is either "anticipated" or "obvious" as either not "anticipated" or "unobvious", see "Cf. In re GULACK, 703 F.2d 1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983) (when descriptive material is not functionally related to the substrate, the descriptive material will not distinguish the invention from the prior art in terms of patentability).".

5. The examiner has cited prior art of interest, for example:

A) either Slocomb (2,839,744) of Gray (3,349,195) or Bard et al (3,354,452) disclose that the operation of converting between a digital value and the corresponding analog value is a non-linear process and hence the output signal may need to be compensated for such a non-linear operation.

B) Bae (5,712,633) discloses a machine/process that provides the useful and beneficial function of determining both the "integral non-linearity" (INL) errors and the "differential non-linearity" (DNL) errors for an analog to digital converter (ADC).

C) Signell et al (5,995,035) discloses the because the process of converting values between analog value and the corresponding digital value is non-linear, various offset error occur at each of the digital code values that the converter can process occur, note figures 8 & 9.

D) Signell et al (6,028,546) discloses the because the process of converting values between analog value and the corresponding digital value using a pipe-line converter is non-linear, various offset error occur at each of the digital code values that the converter can process occur, note figures 10 & 11.

E) Griph (6,037,891) discloses that the operation of a pipeline A to D was simulated to determining errors in the accuracy of the A to D.

F) Kaplinsky (6,211,804) discloses that the worst case transition errors for an A to D occur at 1/4, 1/2 and full scale ranges for the A to D.

G) either Galton (2002/0041248 or 6,734,818 or 7,006,028) disclose that pipeline A to D converters are sensitive to DNL errors caused by miss-matched internal components.

H) Horie (6,320,530) discloses a process of converting between analog values and digital values in which the offset error of successive stages is reduced.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward R. Cosimano whose telephone number is 571-272-0571. The examiner can normally be reached on 571-272-0571 from 7:30am to 4:00pm (Eastern time).

6.1 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow, can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

6.2 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ERC
05/16/2007

Edward Cosimano

Edward Cosimano
Primary Examiner